

# TIMELINEZ

DEDICATED TO THE AMERICAN HEAD TRAUMA ALLIANCE

SAN FRANCISCO / BAY AREA

TIMEX / SINCLAIR USERS

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DECEMBER 1983

\$1.00

TO OUR READERS: In this Christmas issue of TIMELINEZ we will differ from our usual format so that we can present as much information as possible about a worthy project which has come to our attention. The American Head Trauma Alliance is a non-profit organization formed to address the long-term problems of the head injured population and their families.

One of the programs being attempted by this organization is the cognitive rehabilitation of head injured victims utilizing the TIMEX computer. Mr. Richard L. Huxtable of the AHTA is the person in charge of this undertaking and he has supplied TIMELINEZ with an excellent presentation. It will become apparent to our readers that much effort has gone into developing and explaining the requirements for this type of programming. The AHTA also has a review and evaluation procedure set up to handle S/W donations. They have taken a very professional approach to this project.

Now the rest is up to us. We have many TIMEX owners out there who could make a contribution to the AHTA. Advanced programming skills are not necessary - just basic, straight forward, common sense programming. This should be a real opportunity to combine our enthusiasm for the TIMEX computer with a worthwhile project. We hope those who undertake this challenge will keep us informed on their progress. Merry Christmas from the staff of TIMELINEZ.

## HEAD TRAUMA ALLIANCE SEEKS COGNITIVE REHABILITATION SOFTWARE

(HELP! . . I can't . . think of . . the word . . !)

On January 4th, my 17 year old son was a high school senior, tall, broad shouldered, popular, and was about to complete a high school computer programming course at Jet Propulsion Laboratories. . That was also the day he was hit by an automobile and suffered severe head injury requiring brain surgery. . He spent two weeks in deep coma, and two months without the ability to respond. . We didn't even know if he understood what we were saying to him. . By many little things we began to realize that he could hear us, he could understand us, he wanted to respond, he had something he wanted to say, there was meaning in his eyes, he opened his mouth and . . . an anxious expression came over his face . . . Oh God! . He could not remember the words he needed to express his thoughts.

After seven and a half months in the hospital, Rich is home now. . He has come a long way. . Slowly he is reprogramming the most complex computer in the world. . The language is not Basic, Cobol, nor Fortran. . It is a sort of "machine code" unique to the human brain. . He can walk slowly with a four legged cane. . He can remember many words now, and can put together short sentences. . He can understand as well as before, the "INPUT" mode seems operative, though there is a problem with the "FAST" load. . The real problems are the "POKE" command to activate the speech module and the "LPRINT" command to the pen in his hand. . He has to reestablish the associations of words with thoughts, names with things, sounds with letters, time with sequence, motion with direction. . This requires many, many, many repetitions. .

## RICH NEEDS COGNITIVE REHABILITATION. .

Do you know anyone that rides a bicycle or a motorcycle, rides in a car, plays baseball or watches baseball games, or engages in any activity where he or she might be struck in the head? . If so that person may be one of the 70,000 Americans who will suffer severe head injury in the next 12 months. . Half of them will later have trouble translating words into thoughts, or thoughts into words. . Many will recover communicative sufficiency within a few months, but for most, it will take years of repetition. .

THEY WILL NEED COGNITIVE REHABILITATION. . Will the person you know be one of them?

There are many highly qualified speech pathologists that can give guidance in the process, but, for most families, their fees are too high to permit daily sessions. . Most insurance policies do not cover speech therapy, or contain only limited coverage. . The obvious solution is to use the computer between therapy sessions to maintain, or even to sharpen the skills relearned under the guidance of the therapist.

Yes, cognitive rehabilitation software has been developed, but thus far, only for computer hardware costing \$2,000.00 or more. . Most of these programs have been developed for diagnostic or testing purposes under the eye of a psychologist or trained therapist. . The family that just spent thousands of dollars on medical and hospital bills can not afford such costs. .

The AMERICAN HEAD TRAUMA ALLIANCE is attempting to induce development of the needed software in Sinclair Basic. . A description of the prospective user, program goals, possible methodology and format, do and don'ts has been distributed to over one hundred interested programmers throughout North America and England. . When programs are received, they will be reviewed by the Alliance's advisors and parent members. . Suggestions will be made to improve the programs, and when they are perfected, they will be assembled into multiple task groups having common levels of difficulty, with menu access. . Instruction manuals to guide therapists and parents in the use of the programs will be prepared. . Finally, the news will go out to therapists, head injury organizations, hospital discharge administrators, psychologists, physicians and others, that there is cognitive rehabilitation software available for the \$80.00 computer all can afford. .

If you want to try your hand at it - (remember it will not be easy to do it right) - ask for more information through the AMERICAN HEAD TRAUMA ALLIANCE, P.O. Box 711046, Los Angeles, CA. 90017. . Thousands of minds have shaped the computer; now the computer can help reshape the human mind.

(Now I can remember the word) . . . It's HOPE!

(CONT. 34)

R. Huxtable

AMERICAN HEAD TRAUMA ALLIANCE

P.O. Box 711046, Los Angeles, CA. 90017

## A CELEBRATION October 22, 1983

The Timex-Sinclair Celebration, sponsored by the Boston Computer Society Sinclair-Timex User Group, was held at the Boston Park Plaza Hotel. This convention celebrates the second anniversary of this user group.

Approximately 25 exhibitors filled the main hall. A wide range of hardware, software, peripherals, and publications were on display. All the displays were quite crowded with prospective users. "GAMES TO LEARN BY" sold all the 2068's and had only 2 1500's left by the end of the day.

Special exhibits showing the versatility of the T/S computers, many with hands-on activities, were held throughout the day. Gregory Coffin, Ph.D., Director of Urban Schools Collaborations, Northeastern University demonstrated how T/S computers are being used in the Boston schools.

Some of the topics of the 15+ seminars were:

- "USING THE T/S 1000 FOR BIOMEDICAL INSTRUMENTATION APPLICATIONS"
- "THE INS AND OUTS OF STARTING YOUR OWN COTTAGE INDUSTRY"
- "COMPUTER LITERACY"

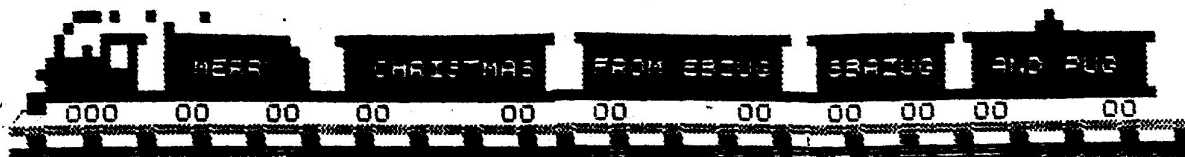
I was invited to demonstrate a musical program for the 2068 written by our own Bob Orrfelt entitled "Maple Leaf Rag", by Scott Joplin".

By far, the most popular talk was a joint effort by Maggy Bruzelius, Executive V.P., Sinclair Research Ltd. and Dan Ross, V.P., Timex Computer Corp. Entitled "The Present and Future Plans for Timex and Sinclair", both speakers stressed the fact that the success of their products was due to the user and third-party vendor support. Although not able to disclose more information, both Sinclair and Timex are excited about new products in the near future. The demonstration of the new technology used in the 2068 was well received and very impressive.

In a private interview with Dan Ross, I conveyed the abandonment felt by users of the 1000, now that the 1500 and 2068 have been introduced. He assured me that Timex was there to help and support all users of all their products. Dan Ross has accepted my invitation to speak to us at an upcoming user group meeting to address our unanswered questions. He will be here on Tuesday, January 31, 1984, at the regular South Bay T/S User's Group meeting, located at Dysan Corp. headquarters in Santa Clara at 7 PM.

In conclusion, the convention was a success in bringing users, vendors, and the manufacturer together to celebrate the success of the T/S computers. This truly was "A Celebration".

-Rita Carr



## The Person Using the Program

**GENERAL** - The head-injured young adult is normally a Person 15 to 25 years of age, most often male, who has suffered a severe head injury and possible brain surgery, as the result of an automobile, motorcycle or other accident. He/She has probably spent several days or even weeks in coma, and several months in a hospital, slowly regaining the ability to walk and to respond to others with a simple "yes" and "no", and one word Phrases.

**PHYSICAL DISABILITIES** - Frequently there are Physical disabilities confining the head injured Person to a wheelchair and very often the use of one hand will be lost or limited for many months, making it very difficult to input rapid multiple responses from separate Portions of the keyboard (such as the up, down, right, and left - Q and A, P and L - input required in Pac-Rabbit), or to operate a Joy stick that slides about the table. Injuries to different Portions of the brain will result in differing Physical and cognitive impairments. No single Program, even with differing levels of difficulty, is likely to be usable by all head-injured Persons.

**ABILITY TO UNDERSTAND** - The ability to Perceive visual stimuli, or to understand words in their written form, may be impaired in cases where the Portions of the brain responsible for that function have been effected. In other cases, if vision is not impaired, the ability to understand visual matter and the written word may be substantially the same as before the accident, HOWEVER, the ability to recall the words needed to communicate or to express thoughts, will be impaired. Even when this recall ability begins to redevelop, it will almost always be somewhat slower than before the injury. The ability to analyze and inter-relate information concerning two, three, or more differing factors, is likely to be slower than in non-injured Persons. It is only in a very few rare cases, that this may be an emotionally based confusion resulting from a sudden change in life's circumstances (i.e.: being injured), where it appears to disappear over a few weeks or months. Actually, it almost always involves a long-term Process redeveloping word recall, short-term (task learning) memory, decision making, problem solving, etc., to which computer Programs might be directed.

**CONCENTRATION** - A substantial number of head-injured have great difficulty in concentrating on a single subject for a long Period of time and they are easily distracted. For this reason, computer programming should load simply and quickly, possibly by cartridge or EPROM, and be as entertaining and as engrossing as possible. (Note: It would be better to have a reliable 6 minute load of 6 or 8, menu access "Games", than separate loads or one temperamental high speed load that "blows out" several times before it takes, even when you are using an interface.

**SHORT TERM MEMORY** - The head-injured Person may often have impaired short term memory. Instructions that involve more than three or four steps or Procedures, are frequently forgotten after a single execution. On the other hand, where such memory is not impaired, frequent repetition of instructions that interrupt or detract from continuity, will anger the user. For this reason, brief instructions appearing as an inconspicuous part of the screen display are best, or the same Program might have alternative formats, one for the Person that requires "renewal" with each execution (Perhaps an always available "help menu" upon entry of a



(shift H)), and another version (or an opportunity to skip by the instructions) for those who are ready to "play the game" on a repetitive basis.

**LONG TERM MEMORY** - Memory of events, schools, vacations, family home, friends, and educational learning Pre-dating the injury, are often quite good, although the ability to recall NAMES or SPECIFIC WORDS needed to communicate that memory or to express new ideas, may be seriously impaired. . In these cases "word clues" and "multiple choice" Programs are desirable, providing that they are not confusing, Presenting too many choices. . QUIZ Programs, requiring entry of properly spelled word answers from memory, are not for early use, unless the recall can be triggered by limited "multiple choice" suggestions. . When used, the Program should permit insertion of several surprise or Personalized questions, such as, "Is your Dad's middle name Byron, Robert, or 'Hey, you!'", "Who gave your kid brother his first bicycle?", etc. . These assure some success, and can be changed from time to time to maintain novelty and interest.

**DECISION MAKING** - Since the ability to inter-relate differing factors is often impaired, so is the ability to make decisions where several alternatives are available. . Decision making is itself a subject matter to which a computer Program might be addressed. . In the early levels, only two or three choices should be Presented, and the time allowed should be liberal. . Existing game Programing can possibly be adapted by allowing the user to choose slower reaction time or rate of increasing complexity.

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**SENSITIVITY** - The head injured subject is very responsive and encouraged by praise. . He/She is also sensitive and discouraged easily, and will immediately reject anything that suggests ridicule. . Phrases like, "No stupid," or "Wrong, Dummy," MUST not be used. . Instead a phrase such as "Whoops, that's not it. Try again." is better. . If the user betters a previous high score, the Program itself should praise the achievement.

**MATURITY** - As indicated above, Perceptive ability of most head injured people is that of a mature, young adult, who can be sensitive to ridicule. . Programs written as if they are for the pre-schooler or early elementary school level, can be perceived as a form of ridicule. . The most difficult task in this form of programming is to take into account the possibility of short memory, short attention span, and impaired decision making ability, while not insulting the head injured person's intelligence.

## Program Goals

Each Program should be designed to develop one or more cognitive skills such as:

**SHORT TERM MEMORY** - Now you see it; now you don't; what was it? . Where were the pairs?

**WORD RECALL** - What is the name for the object or form pictured graphically? . What word can be made from the scrambled letters? (This type of Program can be very frustrating even for uninjured persons, and could be destructive for the head injured, unless word, graphic, or "triggering" (S----) clues are provided.

**WORD MEANING** - Which word is the opposite of . . .? . Which word does not belong? .

Which words relate to the same kind of thing? . Arrange Phrases in Proper time, or in Past, Present and future sequence.

**DECISION MAKING** - Which subject do I want? . Which box could hold the guitar? . Which route will give me the most points with less risk of loss? . Which golf club should I use?

**RELATIONSHIPS; GROUP RECOGNITION** - Three dimensional tic-tac-toe. . Which team wins the scavenger hunt? . Computerized deductive reasoning games. . Arrange described events in sequence of time. . the objects in sequence of size . . the titles in sequence of importance. . Which shape or form is not like the others?

**LETTER AND WORD SOUNDS** - If a speech module is available, any of the above Program concepts can be more helpful if the user hears the words, particularly when the Program provides the correct answer to a question that was missed. (AHTA is experimenting with the DCP Speech Pack, which uses Digitalker vocabulary Kits 1 and 2 to do such things as spell out the word in Hangman Solitaire, announce numerical scores up to 20,999, and give directions in coordinate location Problems, i.e.: "Go North East.")

**QUIZ, OLD & AND NEW KNOWLEDGE** - Testing old knowledge and exposure to new information is desirable, but the more important function is to make the user relearn and use communication skills. . Such a program should be as entertaining as possible, permit entry of personalized questions, use graphics, and where possible, use speech and sound.

**REACTION TIME** - Yes, we want to develop reaction time too, but the challenge must be very moderate as discussed above.

**COORDINATION** - Games requiring coordination must be devised with reference to specific levels of recovery. Simple right or left movements, such as in Asteroids or Roadrace, are good in early levels, if the tempo is slow enough. Fast Paced up and down, right and left, movements using four different fingers on two hands, such as in Pac-Rabbit, would not be possible even in high level recovery cases.

## Graphics

Use as much graphics as possible without too much limitation of subject matter or of variety. Smiling faces; soaring sky rockets; oversized lettered words such as "TERRIFIC" or "ZAPP"; trees that grow up the side of the screen as the score accumulates; mountain climbers; are possibilities. The use of graphics as the stimulus itself is very desirable. "Is the figure shown a triangle, a square, a circle, or the silhouette of a tree?"

## Basic Rules

DO give the user the option to choose when he is ready to progress to the next degree of difficulty; avoid problems that must progress automatically.

DO incorporate a choice of levels of difficulty, and in the the "first time" or "easy" level allow plenty of reaction time or offer fewer choices.

DO provide the correct answer along with "Try again" encouragement.

DO recognize a better score with Praise - the greater the betterment, the greater the Praise.

DO use graphics to create pictures, shapes & diagrams in association with names.

DO use a sound or speech module if it will substantially improve the program.

DO give the user an opportunity to review the rules from time to time, but DO NOT make him do so if he wishes to play without interruption.

DO-NOT require knowledge of a long and complex set of rules.

DO-NOT commit the user to long test or game tasks unless there is an easy way to interrupt and return to the main menu.

DO-NOT use anything that could be taken for ridicule.

DO-NOT require input in easy level programs, that requires both that a decision be made AND that it be made quickly.

DO-NOT make the task last too long; i.e. many 4 or 5 minute successes are better than a 20 minute failure.

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DO-NOT use baby talk or suggest that the user is inadequate.

DO-NOT create a sense of urgency or excitement that could intensify frustrations or even trigger seizures.

## Foremat

The Program should load running, displaying a menu of the available activities by simple descriptive titles, such as, "g = golf", "c = concentration", or "w = what is it?". "Blind" menu options should include "X" which will produce a STOP error code and give access to the Program for modification; "REMCAP" for a report of remaining capacity; and "SWITCH" used to switch over to, or to power down a Cramic or similar RAM Pac. Although these foremats can be changed, we hope that a uniform menu appearance can be maintained to avoid confusion to the users.

## Hardware

The main Purpose of these guidelines is to encourage development of cognitive rehabilitation Programs in Sinclair Basic Language, so that all families with a head injured Person can afford computer therapy. Most will start out only with the T/S 1000 or T/S 1500, a black and white TV and a tape recorder. Speech and sound modules, and the T/S 2000 are possible future extensions. Hopefully cartridges or EPROM units will come soon.

## Submit Program for Review

The American Head Trauma Alliance is a non-Profit charitable organization, with a Primary Purpose of establishing a long term residential facility for head injured young adults who require supportive cognitive rehabilitation. We are not in the business of devising or selling computer products or

software. AHTA does desire, however, to stimulate the development of rehabilitation Programing for use on an affordable computer.

Any Program submitted, should be on cassette and accompanied by its loading name and an explanation of its function and intended Purpose. Each will be reviewed by AHTA consultants and returned with comment. If a sufficient number of suitable Programs are developed, AHTA will Prepare manual materials explaining the manner in which such Programs can be most effectively used, which Programs are suitable at various levels of recovery, provide a form of certification or endorsement, attempt to interest a commercial vendor in providing a "Package" (computer with Programs) to families of head injured, and will obtain national advertising in one or more appropriate Publications. A Portion of royalties generated by sale of Programs given the AHTA endorsement and for which AHTA has Prepared instructional materials, will be paid to or retained by AHTA, for use in its residential development Program. AHTA will not purchase nor will it publish any Program received for review and comment.

The foregoing material does not cover all cognitive or behavioral components of head injury, therapy or treatment. Persons interested in learning more about the subject are encouraged to make inquiry through AHTA, the Speech Pathology Department of a nearby college or university, or other professional facility dealing with rehabilitation.

Thousands of minds have shaped the capability of your computer, now it can help reshape a human mind.

R.Huxtable



SOUTH BAY T/S USER USER GROUP

The next SBAZUG meeting will be on  
Nov. 29, 1983, at 7 P.M. in the  
Dysan Corp. Auditorium.  
Dysan Corporation  
5201 Patrick Henry Drive  
Santa Clara, CA

**President of SBAZUG:**

Rita Carr  
c/o TIMELINEZ  
P.O. Box 1312  
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SOUTH BAY T/S USER'S GROUP

Just a brief note to wish all you T/S  
users HAPPY HOLIDAYS, and to thank you for  
your generous support in electing me your  
new President.

Just a reminder: Dysan Corp. will be  
closed the week of December 25.  
Therefore, we will not have a December  
meeting.

Looking forward to meeting with you in the  
New Year.

Rita Carr

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AT THE NEXT MEETING.

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## TIMELINEZ

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